ALABAMA DEPARTMENT OF FORENSIC SCIENCES

FISCAL YEAR 2001 ANNUAL REPORT

Forensic Sciences Advisory Commission

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President, Alabama Coroners' Association

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Printed by Auburn University Printing & Design

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Director/Chief Medical Examiner

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February 1, 2002

justice (n): the quality of being just, impartial, or fair

Since its inception in 1935, the State of Alabama's Department of Forensic Sciences has had as its very core the impartial analyses of evidence. Our unique strategic placement as a separate entity within the Executive Branch has served the state well for over six and one-half decades and is a model to which other crime labs across the country aspire. We are truly grateful that our creators had the foresight to ensure fairness for all suspects by removing political pressures and prosecution/defense bias from our agency.

Alabama's forensic system has faced many challenges and significant concerns regarding lack of resources. As is evident from the enclosed information, the Department has made strides over the past year and is looking forward to even greater accomplishments in the coming years. None of this would be possible without the diligence and hard work of the staff of the Department of Forensic Sciences. I have said many times before that the employees of this Department are simply the best. Thanks to their hard work and dedication, the Department of Forensic Sciences is able to do much with very little. Please join me in thanking them for all they do.

J.C. Upshaw Downs, M.D.
Department Director
Chief Medical Examiner

The Alabama Department of Forensic Sciences 2001: Address to The State Legislature

It was not too long ago that I came before this body and told you of real and urgent needs of Forensic Sciences. With your leadership, Amendment One was put to the test in November's general election. With extensive bipartisan support, particularly that of the Governor and the Attorney General, the measure passed overwhelmingly. The result for the Department of Forensic Sciences is that $17.5 million in new bond money will be available for the construction and equipping of new forensic science laboratories and educational facilities.

One of the first things my administration set out to do was to establish a five-year plan for future departmental needs. That identified the requirement for approximately $23 million in additional long term funding. The only trick is to come up with the money. As I will point out, we have made some progress there too. I am pleased to report that since 1998, we have purchased $3.7 million of new departmental equipment and have added or replaced 35 scientists, giving us a total of 179 employees (versus 149 in 2000), 74% of whom are in scientific positions (99 forensic scientists versus 74 in 2000).

Last year, I pointed out the critical need for those new employees. This is best exemplified by case backlogs - something easily dismissed as "just some numbers." I told you that the numbers showed that if we were to shut the doors to the lab, it would take 3 months to analyze all the toxicology cases we already had. 8.5 months for illegal drugs. 11.8 months for firearms. 21.1 months for DNA. By October 2000, those figures were 8.2 months for toxicology, 5.1 months for drugs (40% decrease), 8.7 months for firearms (26% decrease), and 21.4 months for DNA. That is a mixed message of success and continued challenge.

Numerically, our biggest area of concern is in the area of illegal drugs, which accounts for 35.9% of the 75,023 cases we worked last year. The most notable success was in Birmingham where our backlog has decreased by over 25% - from over 5000 cases to less than 3400. How did we do it? Forensics met the challenge by requesting and receiving a $500,000 ADECA grant to establish a drug backlog task force. The result: seven new trained scientists, seven more in training today, and a guarantee that if we have no other demographic changes in the area of drugs, Alabama will go from over 12,000 to zero backlogged drug cases and we will have no drug backlog within 18 months. The reason? Very simple really, we are scientists who analyze things to come up with answers. We told you what we needed to get the job done, we got the resources, and we are doing the job. If we receive more, we can do more.

In DNA statewide, from February to December 2000, we saw a 1.5% decrease in backlog. The good news is that in Montgomery, our most backlogged DNA section, we had a 22.5% decrease in the last 9 months. We have gone from 13 to 21 DNA scientists this year. If all 8 of the trainees were fully trained, our DNA backlog would amount to roughly 12 months. We estimate we need a total of 27 trained DNA scientists to deal with the present caseload and 41 to clean up the backlog and be prepared for future casework. The need for additional DNA scientists is predicated on the success of DNA evidence. The DNA database has resulted in some 47 "cold" hits where investigators had no idea who the perpetrator was, but where a computer stored DNA pattern matched a convict in the database. This success has resulted in an 11% increase in DNA caseload. Success breeds success. Again, if we receive more, we can do more and do it more rapidly.

In May, 2001 Forensic Sciences will host, for the first time in the history of our state, a comprehensive training seminar specifically targeted to coroners and other investigators in death cases. We have also been active with a multi-agency consortium in an effort to educate the public about shaken baby syndrome - a violent form of child abuse, which claimed 11 of our children last year.

Without question, the biggest success of the department in the last year has been the complete statewide implementation of the new Draeger DUI breath-testing program. We have installed 230 new sites and trained 5500 operators, resulting in 25,000 new DUI cases to date. The best part is that the guilty fund this operation - to the tune of $7.4 million to date from the Chemical Test Trust Fund.

Our budget request breaks down to a total of $15.6 million, roughly half ($7.8 million) from the general fund and half ($7.85 million) from other funds. We are requesting an increase of approximately $440,00 for fiscal year 2002. This will allow us to hire six scientists in permanent positions, rather than temporary (grant-based) ones. Overall, 70% of our total request is for personnel expenses - 83% from the general fund. Our personnel expenses are high but experienced, qualified scientific personnel are essential in the area of Forensic Sciences. The more we have, the more we can get done.

There is exciting news regarding federal funding and two men in particular are deserving of special thanks. Many of you were familiar with the National Forensic Sciences Improvement Act, introduced by the late Georgia Senator Paul Coverdell. With the Senator's untimely demise this past summer, this bill appeared to be a lost cause. Our long-term friend, Senator Jeff Sessions, introduced a revised version of this bill in mid-September 2000. They said it couldn't be done but Sen. Sessions achieved the impossible. With strong bipartisan support, the Paul Coverdell National Forensic Sciences Improvement Act was signed into law on December 21. This means a total of at least $5.2 million to Alabama over the years 2002 through 2006. Now it is incumbent on all of us to encourage the federal government to fully fund this measure. I urge the legislature to pass a resolution of support for this measure.

As if that were not good enough news, Alabama received an early Christmas present from Congressman Spencer Bachus. Thanks to his hard work and belief in our department, the Alabama Department of Forensic Sciences would receive a $1 million grant in fiscal year 2001 for the purchase of equipment.

In short, the short-term picture for the department still looks grey - it's hard to accomplish everything overnight. We didn't get where we are in a day and we won't get where we need to be in a day. We have come far and accomplished much thanks to the best group of employees in state government. The desperately needed emergency funding needs of this department are on the horizon: $17.5 million from amendment one - $11 million of that to our new lab facilities, $5.2 million over five years from the federal government, $1 million this year from the federal government Please remember that as of January 30, 2001 the Department of Forensic Sciences has yet to receive one thin dime of this money.

We must find a way to permanently adequately fund our agency. I know as well as you the limitations of the state's general fund. Such being the case, we must find help elsewhere. This would allow our department to more rapidly analyze an increased volume of cases and help speed the justice system.

Our constitution guarantees the right to a speedy trial - adequate funding for forensics helps protect that right. I look over at the United States flag and cannot help but remember the close of the pledge of allegience: "justice for all." It does not call for justice for only those who can afford it or only in those instances where evidence can easily be analyzed quickly. "Justice for all." For victims, for their families, for the courts, for law enforcement, for the scientists, and for the suspect.

In summation, our challenges are many, as are our opportunities. Many pose the question of whether the glass is half full or half empty. I prefer to look at life from a different perspective - at least I have a glass. Together, we can fill that glass to overflowing.

Organizational Chart

Laboratory Supervision

J.C. Upshaw Downs, M.D.
Director and
Chief Medical Examiner

Forensic Sciences Advisory Commission

F. Taylor Noggle, M.S.
Deputy Director
HQ Admin;
DC; FD; QD; TR

Rod Kennette, B.S.
Quality Manager

Samuel Mitchell, M.S.
Chief of Staff

Brent Wheeler, M.S.
Deputy Director
Lab Services;
FA; FB; TX; HQ

Rodger Morrison, B.S.
Huntsville Region I
Laboratory Director

Mary Holt, J.D.
Birmingham Region II
Laboratory Director
CS; DC; FA; FB; TX; FD; QD

Dale Carpenter, Ph.D.
Calera Implied
Consent Laboratory
Director

Craig Bailey, B.S.
Montgomery Region III
Laboratory Director
CS; DC; FA; FB; TR

Leroy Riddick, M.D.
Mobile Region IV
Laboratory Director
CS; DC; FA; FB; FP; TX

Selwyn Jones, B.S.
Florence
Laboratory Director
CS; DC

John McDuffie, Ph.D.
Tuscaloosa
Laboratory Director
CS; DC

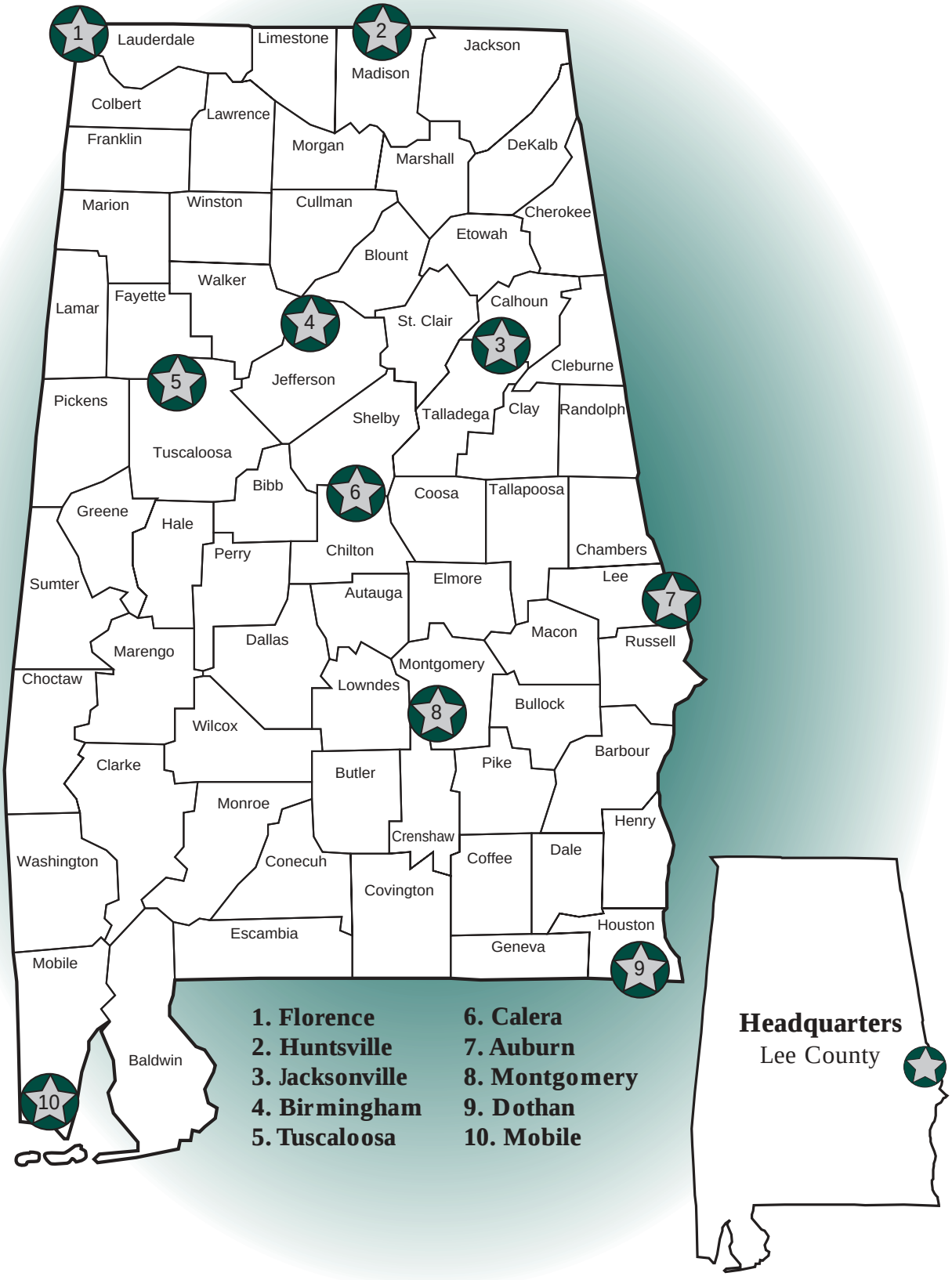
John Case, B.S.
Jacksonville
Laboratory Director
CS; DC; TR

Sherwin Boswell, B.S.
Auburn Laboratory
Director
CS; DC; TX

Marc Crews, B.S.
Dothan Laboratory
Director
CS; DC

CS = Crime Scene Investigation; DC = Drug Chemistry; FA = Firearms/Toolmarks; FB = Forensics Biology (DNA); FD = Fire Debris; FP = Fingerprints; HQ = Headquarters; QD = Questioned Documents; TR = Trace Evidence; TX = Toxicology.

Location of
Forensic Laboratories



The History of the ALABAMA DEPARTMENT OF FORENSIC SCIENCES

The department of Forensic Sciences was founded as the Office of the State Toxicologist by an act of legislature, signed by Governor Bibb Graves, on July 17, 1935, with an initial appropriation of $8,000. The first office and headquarters for the department were established at the Alabama Polytechnic Institute so it would have a facility in which to operate, and because part of the initial duties were taken from the duties of the state chemist, who worked for the Dean of the School of Chemistry. This start helped create the relationship the agency has had with Auburn University and with other universities throughout the state.

H.W. Nixon, first director of the Alabama Department of Forensic Sciences

Laboratories were established in Mobile in 1939, Birmingham in 1941, Montgomery in 1951, and Huntsville in 1954. Additional expansion by means of smaller satellite laboratories (with federal assistance), occurred in the early 1970's with laboratories in Enterprise (now located in Dothan), in Tuscaloosa at the University of Alabama(now located in Northport), in Florence at the University of North Alabama, and in Jacksonville at Jacksonville State University. A fifth satellite laboratory was opened in Selma, but closed when Craig Field ceased operations in the late 1970's.

Some of the initial leaders, founders, or otherwise great people in early Alabama Forensic Science history include:

H.W. Nixon, first Director and author of the initial law. He served with distinction for 5 years.

C.J. Rehling, Ph.D., second Director and known statewide for his keen mind and scientific knowledge. He was a charter member of the Police Officers Hall of Fame.

Paul Shoffeitt, Ph.D., first Deputy Director. He had great insight for determining the correct answer, managing the daily department business, and keeping all eyes on the goal of seeking the truth.

Nelson Grubbs, first Director of the Mobile office and an unmatchable wit. He was one of the finest crime scene scientists of all time.

Van Pruitt, B.S., the first Director of the Montgomery office and later Director in Huntsville and Deputy Director at Headquarters. He worked for perfection in all investigations and is one of only 2 former employees to be named to the Police Officers Hall of Fame.

Bob Johnson, B.S., first Director of the Birmingham office, who worked on a number of very difficult cases but who never lost his smile and humor.

William McVay, B.S., first Director of the Huntsville office, whose primary concern was always to take the time to get it right.

Carlos L. Rabren, M.S., the third Director, who served from 1978 to 1998. Mr. Rabren was the "architect" of the multi-lab system, was progressive in Death Investigation, and fought hard for money and other support for the agency. He was the author of the first federal grants used to expand the services offered by the department. Our survival today depends a great deal on the federal dollars that come to us in the form of matching grants.

Jamie Downs, M.D., is the present Director and Chief Medical Examiner appointed in September of 1998 by Attorney General Bill Pryor.

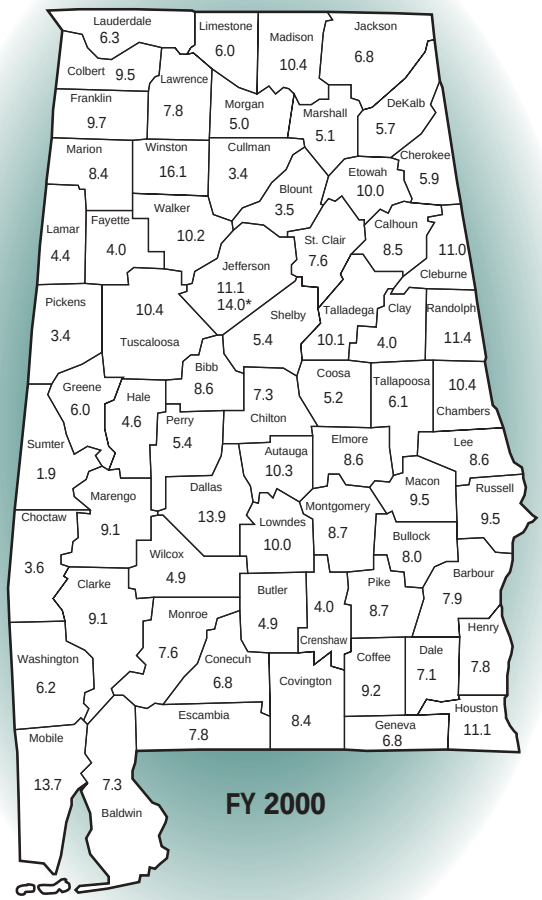
Some significant current leaders of Forensic Sciences also include Deputy Directors F. Taylor Noggle, M.S., and Brent Wheeler, M.S., at Headquarters in Auburn, Alabama. Regional Lab Directors are: Craig Bailey, B.S. (Montgomery), Mary Holt, J.D. (Birmingham), Rodger Morrison, B.S. (Huntsville), Leroy Riddick, M.D. (Mobile), and Dale Carpenter, Ph.D. (Calera) Joseph H. Embry, M.D., the department's first State Medical Examiner (1978), is the Northern Regional Medical Examiner handling the investigation of deaths in North Alabama from the Birmingham office. LeRoy Riddick, M.D., the department's second State Medical Examiner (1979), who is the Regional Medical Examiner for Southwest Alabama serving as Regional Lab Director of the Mobile office, and who also serves as County Medical Examiner for Mobile County. Emily Ward, M.D., who is the Regional Medical Examiner for Central Alabama serving in the Montgomery office. The Satellite Lab Directors are: John Case, B.S. (Jacksonville), John McDuffie, Ph.D. (Tuscaloosa), Sherwin Boswell, B.S. (Auburn), Marc Crews, B.S. (Dothan), and X. Selwyn Jones, B.S. (Florence).

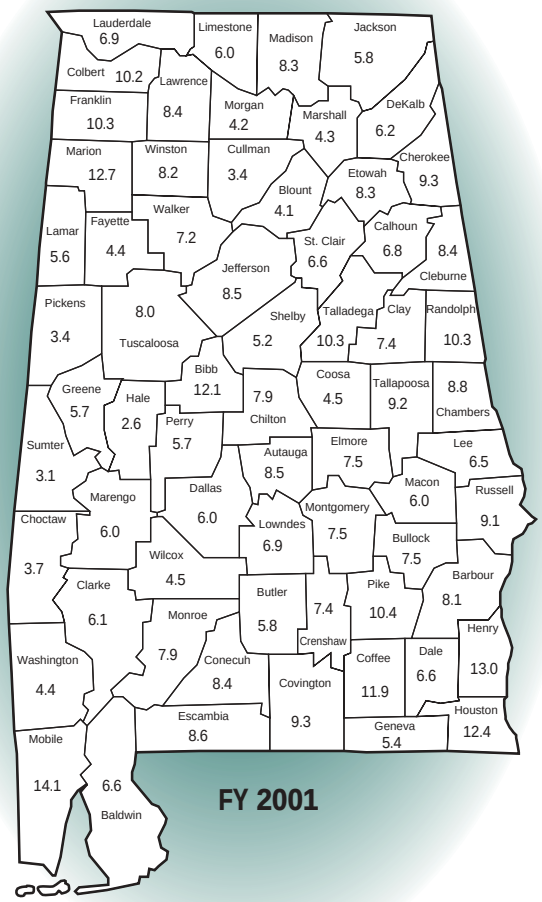
The department is the scientific arm of investigative agencies, with duties to assist sheriffs, police chiefs, coroners, state officials, and other law enforcement agencies in investigations of deaths and crimes. Deaths investigated are those which are unexplained, that is, they are not known to be due to natural causes, therefore needing examination to determine if they are deaths from unlawful causes, and to recover evidence to associate an unlawful death with the perpetrator. Crimes investigated are primarily felonies but are not so limited by law. *(Code of AL 1975 36-18-2)*

The department's primary resources are located in Huntsville, Birmingham, Montgomery and Mobile, with nearly half of the resources of the department located in the Birmingham and Mobile offices. The Headquarters for the department is maintained at Auburn. The agency, while having law enforcement authority and scientifically trained investigators, maintains investigative impartiality. The department is in the executive branch of state government and the Director is responsible to the Governor and the appointed cabinet officers, such as the Finance Director, for administration of the department. Reports are public record and available to anyone on request. Proximity to state universities allows access to those resources to assist in investigations, if needed.

Cases Worked

(Excluding DUI)





Alabama population* 4,447,100

FY 2000 Total Forensic Sciences cases worked* 70,463

Total cost per case worked* $202.04

FY 2001Total Forensic Sciences cases worked** 89,902

Total cost per case worked** $197.91

Total average cases worked per 1000 citizens* 17.8

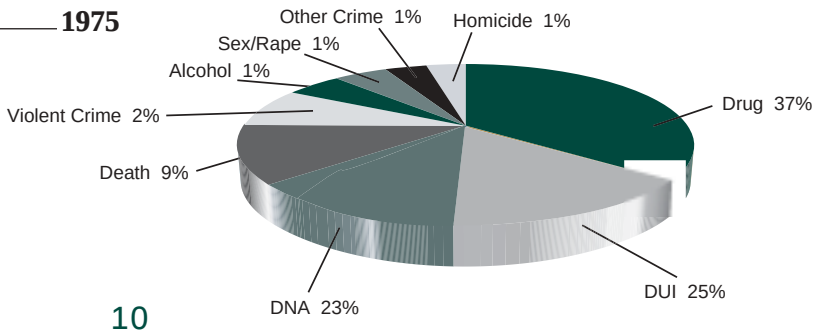
Total court hours* 1975

FY 2001

- **13.7 cases per 1000 citizens non-DUI**
- **4.1 DUI cases per 1000 citizens**

ADFS Cases 2000

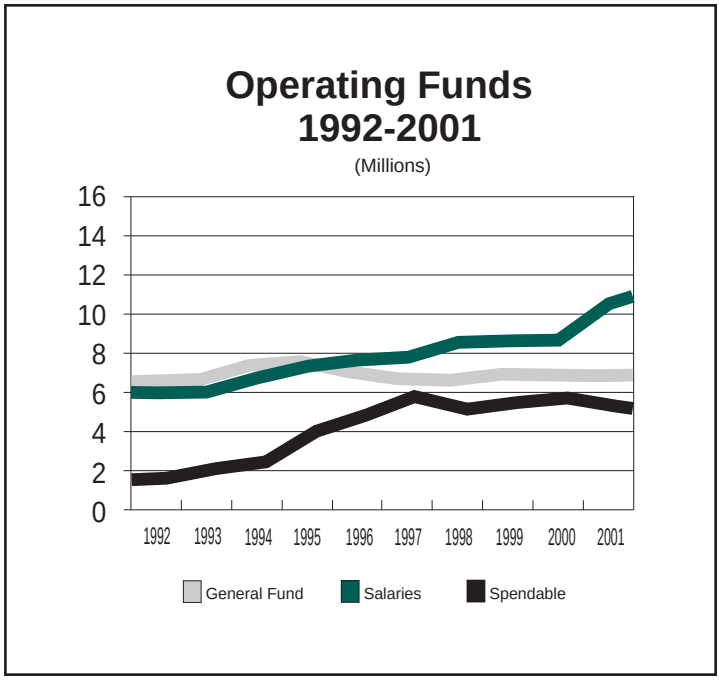
n=70,463 total



* FY 2001 information not available; FY 2000 data
** Projected FY 2001
*** Source US Census April 2000

Accomplishments

Administrative



Budget

- **2.0%** reduction in cost per case
- Increased overall budget **9.9%** to $15,644,027
  - **3.7%** increase in general fund to $7,413,081
  - **32.4%** increase in earmarked funds
    - Forensic Services Fund
    - DNA Fund
    - Chemical Test Fund
- Children's First Trust fund created and funded
  - Allowing fund growth for program development and implementation

Personnel

- Staffing (July 2001) 175 employees
  - (versus 149 in May 2000)
- Staffing changes (July 2000 to Oct 2001)
  - Promotions: 38 employees (**19.4%**)
  - Net gain: 21 employees (**14.1%**)
  - New hires: 58 employees (28.9%)
  - Retirees/Departures: 31 employees (14.1%)

Quality System

- Appointed statewide Departmental Quality Manager
- Implemented case coding in death investigation to allow data analysis by cause of death
- Standardized and implemented case review format for death cases
- Standardization of autopsy report format statewide (in progress)
- Standardization of analysis and report format for all disciplines statewide (in progress)
- Inmate tracking database system for CODIS

Growth

- Rededication of Montgomery Medical Examiner laboratory as "C.L. Rabren Laboratory"
- Renovations of Montgomery Medical Examiner laboratory
- Planning design and site selection for new Birmingham laboratory (98-391)
- Planning design and site selection for new Montgomery laboratory (98-391)

Public Service/Public Relations

- Courtroom testimony in multiple high-profile cases
- Scene investigation and casework in multiple high-profile cases
- Testimony before US Senate Judiciary Committee "Funding for Forensic Sciences"
- Testimony before US House of Representatives "Federal-State Cooperation in DNA"
- Consultant Forensic Pathologist, *H.L. Hunley* excavation
- Funded and taught 1st Annual Coroner, DA, & Law Enforcement Forensic seminar
- Multiple education/training classes for civic groups, DA's, law enforcement, & coroners
- Attorney General's Law Enforcement Advisory Committee
- Advisory Council, Alabama Highway Traffic Safety Coordinating Committee
- Statewide Child Death Review Team
- Governor's Task Force on Alcohol Abuse
- Bioterrorism Preparedness Task Force, Alabama Department of Public Health
- Injury Surveillance Task Force, Alabama Department of Public Health
- Editorial Reviewer, Journal of Homicide Research Working Group
- National Forensic Academy, Univ. of Tenn. – Law Enforcement Innovation Center
- Liaison to the States Coalition, National Association of Medical Examiners
- Board of Directors, National Association of Medical Examiners
- Broadcast Media
  - FBI Law Enforcement Training Network: Investigating Shaken Baby Syndrome
  - "Federal and State Lab Cooperation on DNA," C-SPAN 2
  - "The New Detectives: Case Studies in Forensic Sciences," Discovery Channel
  - "For The Record," Alabama Public Television
  - "H.L. Hunley," America Good Morning, National Syndicated Live Radio
  - "County Law," Montgomery
  - Interviews for Local Broadcast: Birmingham, Mobile, Dothan, & Montgomery
- Print Media (feature stories about)

Huntsville	Decatur
Jacksonville	Opelika-Auburn
Anniston	Mobile
Birmingham	Montgomery
Charleston (SC)	

- Education/training conducted
  - National Conference on Shaken Baby Syndrome
  - FBI National Academy
  - American Academy of Forensic Sciences
  - National Association of Medical Examiners
  - Alabama Bureau of Investigation seminar
  - Regional District Attorneys, Houston, Henry, Dale, & Geneva Counties
  - Alabama Bench & Bar Meeting
  - Alabama Sheriffs' Association
  - Alabama District Attorneys Association
  - Law Enforcement Coordinating Committee
  - Regional Law Enforcement Seminar, Eufala

U.S. Senate Judiciary Committee Hearing, Washington DC, 15 May 2001

DNA Crime Labs: the Paul Coverdell National Forensic Sciences Improvement Act

The Impact On Medical Examiners and Coroners
Department of Forensic Sciences, State of Alabama

Thank you Mr. Chairman and ladies and the committee for the privilege of coming before you to address this distinguished body. I speak today on behalf of our nation's Medical Examiner and Coroner community; please accept our sincere gratitude and appreciation for this opportunity.

I think it highly significant that members of the forensic sciences community come before you today, just a few days following the successful prosecution of the perpetrator of one of the single most cowardly acts on record – the bombing murder of children in a church. In a nutshell, the investigations conducted by all forensic scientists, medical examiners, and coroners are targeted to collecting sufficient evidence – from the examination of the crime scenes and from the autopsy examination of the broken and bloodied bodies – to provide the courts with sufficient credible scientific evidence to ensure that justice is done. We are impartial scientists and physicians charged with the awesome responsibility of explaining how and why a fellow human being's life has been taken away.

Regrettably, due to limited resources, most medical examiners and coroners do not have sufficient staff and equipment to perform at an optimal level. This shortfall adversely affects our criminal justice system because the lack of needed materials and personnel hinders the pathologist's ability to expedite reports in criminal cases. Such reports are necessary for successful criminal prosecution. Suspects – innocent until proven guilty – sit in jail awaiting their day in court. In Alabama, that wait recently has been as long as thirty months. This despite our constitution's assurance of the right to a speedy trial.

While we oftentimes think of forensic matters as they relate to high profile cases – mass disasters, acts of terrorism, homicides and the like – I would like to speak for a moment on other forensic pathology issues that might be underappreciated. While perhaps less important, at least to some, than high profile cases, overall most of our cases involve sudden, unnatural, and suspicious deaths of adults and children. In short, the medical examiner/coroner investigation is the final word as to whether or not a death is due to natural causes, foul play, or preventable means. If the medical examiner can assist by preventing even one additional death, the funding invested in the office has been well-spent. In dealing with the victims of tragic sudden death and their families, the forensic pathologist plays a critically important role in the lives of innumerable other people – the surviving family members, friends, neighbors, the community at large, the police, the courts, … all of us.

To illustrate a typical non-homicide investigation, allow me to share a situation I was involved in just two weeks ago. This case involves the death of a 6-month-old baby, born prematurely. The child was healthy and had been doing well until one morning when the mother awoke to discover her deceased child's body. Both parents were obviously distraught at their loss. And yet they – as well as the investigators – wanted to know what had happened. The autopsy was performed and four months later, they still had no answers. The reason for the delay is that the toxicology lab (that area that looks for drugs and poisons in the blood) was backlogged and could not analyze the sample any more quickly. Imagine the grief, frustration, and anger of not knowing why your baby had been taken from you. Imagine that feeling every day for a month…two months …three months…four months. Imagine in some areas where that analysis takes over a year simply because the medical examiner laboratory does not have the resources available to perform the test more quickly. This is even more tragic given that in most cases it takes less than a week to actually perform the test. Eventually, four months after the fact, and only because they called to request assistance, the toxicology testing was completed. In the end, the autopsy and scene investigation allowed determination that the child had died from an accidental suffocation and that no foul play was involved. This is vitally important to the parents in reassuring them that there was nothing they could have done differently, given the circumstances.

This case then affects the law enforcement agencies involved, who can then save their resources to investigate homicides and suspicious deaths. It also affects any insurance benefits that might be pending the results of the autopsy. It is

not at all uncommon to have urgent calls from families pleading for an autopsy report for insurance purposes so that they can pay for the burial expenses or make the payment on their home.

It is shameful that the answer to these problems is simply a matter of providing adequate resources. Different systems need different things, depending upon the particular concerns of the area served. Some might need an adequate building. Others perhaps modern and more efficient equipment. Still others may require additional personnel. The real strength of the Paul Coverdell National Forensic Sciences Improvement Act is that it allows different forensic systems to establish a plan in deciding how their particular population would best be served in allocating new resources.

We are reminded of the medical examiner component of this law by the untimely and tragic death of the bill's namesake, Senator Coverdell, who was called home far too soon. His passion was for justice and truth. Those core principles are the essence of this law. Providing the resources so that forensic examinations and autopsy reports can be completed in a timely manner will allow more efficient use of all our resources. By fully funding the Paul Coverdell National Forensic Sciences Improvement Act, the pledge of allegiance's assurance of "justice for all" can be fulfilled – justice for those suspects awaiting a speedy trial, those loved ones awaiting closure, and those in financial need awaiting insurance benefits. Most importantly, it will help ensure the rights of those who did not choose or desire to become homicide victims – whose lifeless bodies cry out from their graves for a swift resolution to their case so that their attacker can be put behind bars and their families can begin the healing process. That is surely justice for all.

I thank you for you kind consideration of this matter and your interest in trying to help our nation's crime laboratories and medical examiners.

U.S. House of Representatives
Government Reform Committee
Government Efficiency, Financial Management,
and Intergovernmental Relations Subcommittee Hearing,
Washington DC, 12 June 2001

"How Effectively Are State and Federal Agencies Working Together To Implement the Use of Newly Developed DNA Technologies?"

Department of Forensic Sciences, State of Alabama

Thank you Chairman Horn and distinguished committee members for the privilege of coming before you today. As the Director of one of the few fully integrated Forensic Laboratory-Medical Examiner systems in the country, and as a practicing Forensic Pathologist myself, I hope to bring you a perspective from the state and local level on the status of our nation's forensic laboratory systems.

An ideal forensic laboratory requires three things: objectivity, competent and dedicated employees, and resources.

The Alabama Department of Forensic Sciences is an independent agency within the Executive branch. The Director is appointed by the state Attorney General. Our department has been independent since its inception. The creation of Alabama's forensic system was tied, in large part, to a tragic miscarriage of justice related to evidence – biological (DNA) evidence. The 1931 cases of nine young Black men (known as "the Scottsboro Boys") who were unjustly convicted of rape, pointed out the absence of a competent impartial forensic agency within the state. In 1935, Alabama's legislature changed that by creating our department to serve as independent and unbiased scientists charged with the collection and analysis of scientific evidence. Our scientists are certified as peace officers and have the power to enter any crime scene for the purpose of securing evidence. All reports of our investigations, both on the scene and in the lab, are public record. Departmental reports of analyses clearly indicate factual results and scientific expert opinions based on those results.

Allow me to walk you through a typical homicide case, recently broadcast on television (a copy of which is submitted for the record). In May of 1994, the badly beaten body of an 85 year-old woman was found floating in a pond. Her elderly son was the suspect. At the scene, we recovered a cigarette butt. The evidence was taken to our DNA section and later proved to have the son's DNA on the surface. At trial, the defense challenged the evidence – questioning how it had been collected, stored, transported, and analyzed. Because this case had been handled properly, there was no difficulty in chain of evidence or in having the criminalistics expertise on-hand for pre-trial and courtroom presentation. Because I had found that cigarette at the scene and personally transported it to the lab, I was able to not only testify as to the handling of the evidence but to produce the scene photograph on the stand. The successful prosecution of this case hinged on that cigarette butt. That was possible because the local laboratory had done its job. This story is not unique, it happens every day in medical examiner and forensic laboratories nationwide. It happens because good people who care do their jobs. On the whole, you will find no finer group of employees than our nations forensics personnel.

Our difficulty then, has not been with a question of neutrality or of ability, rather it has been a question of resources, more accurately lack of resources. My parents taught me a long time ago that you get what you pay for – if you want quality, you must be prepared to pay for it. In the business world, income must meet

expenses in order to remain financially solvent. To make ends meet in the realm of forensic sciences, we could only adjust three factors: quantity, quality, and timeliness. Quantity is beyond our control – in order to make criminal cases, evidence must be collected and analyzed. Quality is not on the table – one does not strive for mediocrity in any area, particularly when someone's life literally hangs in the balance. That leaves timeliness – we work as many cases as quickly as we can, but our caseload has grown while our funding has stayed level. The result is staggeringly large backlogs, delays in issuing scientific analyses: 6 months in drug cases, 12 months in toxicology, and 21 months in DNA.

Competent, complete, and timely analyses of forensic evidence are expensive. Very expensive. My department's annual budget is $15.6 million for some 80,000 cases, or $195 per case. In the area of DNA analysis, our agency spends approximately $140.00 per DNA sample analyzed, about $25.00 per CODIS database sample, and over $135,000.00 for each cold CODIS hit. Is it worth it? I cannot answer that question, except to say that to a victim or their family, the answer would be obvious.

Consider the plight of a father who came to me recently to ask if the evidence in the rape of his 12 year-old daughter had shown who had violated his little girl. Imagine his surprise when I had to inform him that the 6 months he had already been waiting was not all that long, since the average wait time in Alabama was almost 2 years for DNA analysis. Consider if, for purely financial reasons, we had had to limit the number of samples our lab could process in a case. In this 12 year-old's rape, 2 pair of panties had been recovered. Suppose we could only look at one – hope we get the right one.

This case then points to the importance of skilled crime lab analysts available locally to screen and process evidence in order to maximize the value of what evidence is collected at the crime scene. Good scene investigation is the cornerstone of all forensic sciences and medical examiner work, including but not limited to DNA evidence. *If we learned nothing from the People versus O.J.Simpson, we learned that the existence of evidence alone is not sufficient*. All evidence must be collected, stored, and analyzed competently, expeditiously, and impartially if our court system is to work as designed – that is to ensure justice.

We must recognize and accept that old adage – "one cannot be all things to all people." Federal support should be directed at complimenting, rather than supplanting, the state and local forensic efforts. Crime scene work is best handled on a local basis. If we are to ensure that the public, law enforcement, district attorneys, defense attorneys, judges, and the courts have fair access to the truth, we must strive for sufficient resources at the state and particularly the local level, to provide personnel, facilities, and equipment. Rarely, there are needs for additional, highly specialized tests. A system should not be inverted to work to the rarity but should maximize services provided to the most people. One must ensure that the local or state forensic laboratory has the ability to meet the needs of the population served.

In an era of limited resources, we must target the available funds where they will do the most good. Put another way, if 99 out of 100 forensic cases are delayed due to inability to perform toxicology analyses and only 1 in 100 due to lack of DNA infrastructure, then one should address the greater need first. Put the money where it will do the most good for the most people. The recently passed Paul Coverdell National Forensic Sciences Improvement Act (PL 106-561) directs significant federal assistance to state and local crime labs but is, as yet, unfunded. The real strength of this law is that it requires states to formally adopt a plan to deal with local and statewide forensic and medical examiner issues as a condition of receiving funding. For the first time, the states will have to implement a plan to deal with all the involved interests within the state. Now that is a reform that creates efficiency in government.

I humbly suggest that we not stop there. I believe a National Commission on the Future of Forensic Laboratories should be established. Said commission should allow representatives of the local, state, and federal crime lab and medical examiner communities to come together with various nationally recognized independent scientific authorities, the judiciary community, district attorneys, defense bar, and investigating agencies. This would allow the various states and concerned federal entities to create a broad vision for the future of all forensic laboratory and medical examiner concerns nationwide. In working together, we can successfully complete the fundamental mission of all crime labs and medical examiners.

Our department's mission statement is simple:

To strive for excellence in all endeavors,

to seek to serve as stewards of the public trust,

to find the truth – whatever that might be,

and not to yield to forces which would attempt to compromise the former.

To strive, to seek, to find, and not to yield.

With full funding for the Coverdell Act and the DNA Backlog Elimination Act of 2000, a lack of resources will not create injustice through continued delays in evidence analysis.

We have the desire. We have the ability. We lack the resources. The nation's crime labs are literally drowning in a sea of evidence. Local and state crime labs and medical examiners need your help to keep us from going under for the last time.

Thank you for your interest in this most urgent and important issue.

Bachus Secures $1 Million for the Alabama Department of Forensic Sciences

"Justice delayed is justice denied. But because our crime labs are so woefully underfunded, there is a huge delay in getting crucial evidence tested. The problem is particularly severe in Alabama, where it takes up to 21 months to process DNA samples," said U.S. Rep. Spencer Bachus (R-AL) a member of the House Judiciary Committee. "In Alabama, crime victims and their families often have to wait two years or more to get justice and those who are falsely charged have to wait that long to finally be absolved of a crime," said Bachus. "The emotional, physical and financial toll this takes is incalculable. There are a lot of problems money can't fix. This is not one of them."

Programs

- Attorney General's Law Enforcement Summit, Oct 16, 2001 "Forensic Sciences"
- Community Oriented Policing Services Grant (via US Rep. Spencer Bachus) $1,000,000
  - 40 Digital cameras
  - 12 Digital imaging computer workstations
  - 10 Photomicrographic digital camera adapters
  - 4 Gas Chromatograph/Mass Spectrophotometer
  - 8 Computer servers with Windows NT (statewide update)
  - 1 Scanning electron microscope (SEM-EDX)
  - 3 Comparison microscopes
  - 6 Compound microscopes
  - 1 DNA Analytical instrument
- Complete eradication of existing toxicology backlog
  - Send out all blood drug analyses to reference lab (National Medical Services)
  - ~$300,000 cost funded by Chemical Test Fund and Children's First Trust Fund
- 2nd Annual Coroners, District Attorneys, and Law Enforcement Seminar
- Lobbying for funding for Paul Coverdell National Forensic Sciences Improvement Act

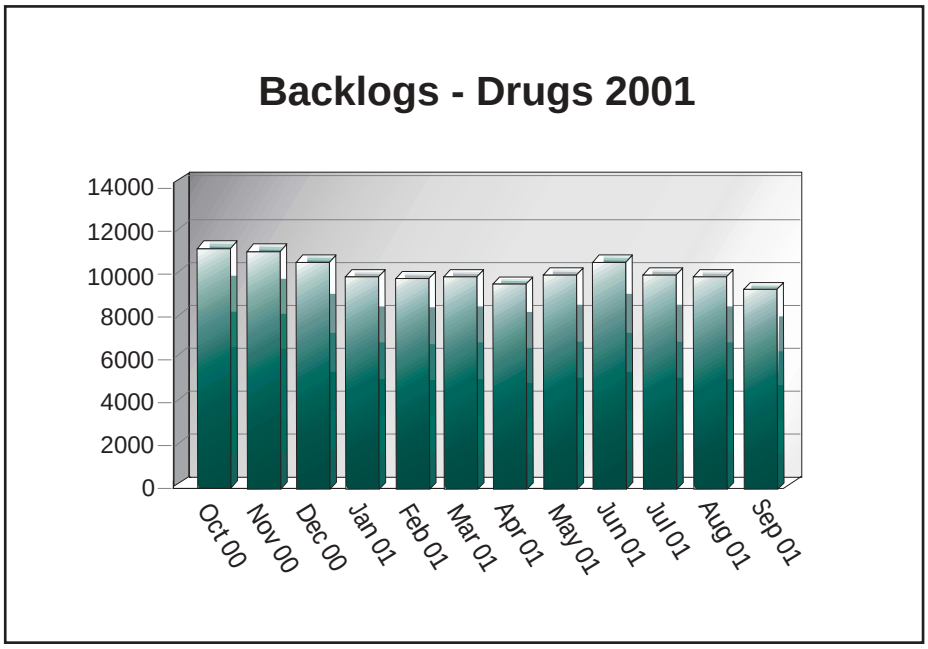
Computerization

- Re-wire all labs statewide with category 5 or better fiber optics
- Completion of new Birmingham laboratory (Amendment One)
- Completion of new Montgomery laboratory (Amendment One)
- Redesign and update web page www.adfs.state.al.us
- Board of Directors, Alabama Law Enforcement Technology Alliance
- Southwest AL Integrated Criminal Justice System, Board of Directors/Budget Committee
- Laboratory Information Management Systems (LIMS)—*for 10 Labs*
  - 8 new servers
  - 8 new local area networks cabled
  - 30 high resolution digital cameras
  - 36 workstations
  - 36 bar code scanners
  - 36 bar code printers

Scientific Disciplines

Drug Chemistry (Illicit Drug Analysis)

- Total 33 trained reporting scientists & 2 technicians
- Drug Task Force Training Center (via ADECA grant (25% match))
  - Equipment (FY 2000 + 2001)
    - 7 (4+3) gas chromatograph/ mass spectrophotometers (GC/MS)
    - 8 (4+4) Fourier Transform Infrared Spectrophotometers (FTIR)
    - 1 (1+0) high pressure liquid chromatograph (HPLC)
    - 5 (5+0) specialized microscopes
    - miscellaneous electrical/technical instruments
  - Results (Sept 2000 + FY 2001)
    - 18 new trained drug chemists – **120% increase in trained scientists**
      - **50% increase in new and trained scientists** (from Aug 2000)
      - 5 new drug analysts hired and trained (FY 2000)
      - 7 existing drug analysts completely trained (FY 2000)
      - 6 new drug analysts hired and trained (FY 2001 (July))
        - **22% increase in new and trained scientists in FY 2001**
    - **19.9% decrease in drug backlog statewide** in 11 mo. (12,702 to 10,171)
      - 1.8% decrease in drug backlog per month
      - **78% decrease in Birmingham** drug backlog (4829 to 1032)
        - lowest Birmingham Drug backlog since July 1997

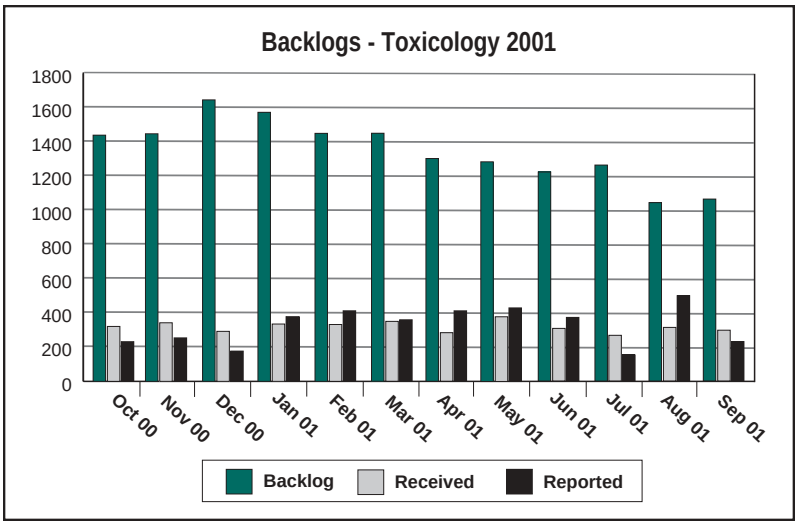


- Clandestine methamphetamine labs ("clan labs")
- ADFS Drug Chemists trained by DEA to process these hazardous scenes
  - Total **17 OSHA certified** Clandestine Lab Chemists (**51.5% of section**)
  - Each lab requires minimum 2 scientists per scene
  - 250 clan labs worked[++]
  - 1168 hours (146 days) extra (unpaid) scientific work[++]

[++]Period Dec 2000 through FY 2001

Toxicology

Total 3 trained reporting scientists
(excluding Implied Consent Operations)



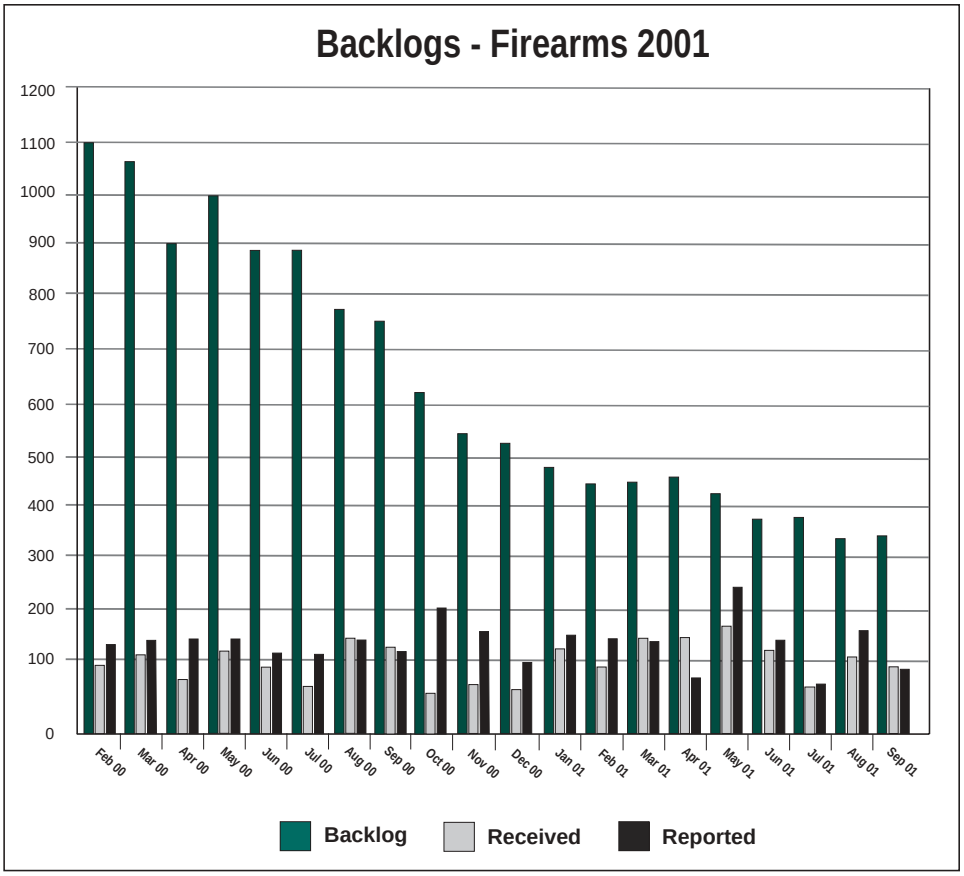
Increased personnel and equipment allowed

19.6% decrease in backlog over last 12 months (FY 2001) – 1.63% per month

27.5% decrease in backlog over last six months (i.e. July - Oct) – 4.6% per month

Implied Consent Operations (ICO) – DUI Detection Program

- renovated and occupied state-wide ICO lab in Calera
- 45,948 DUI cases in database
- 232 instruments in the field
- 6409 law enforcement operators trained



Firearms

Total 9 trained reporting scientists

Despite no additional special funding, increased productivity yielded:

68% reduction in firearms backlog statewide in 20 months (Feb 2000 to Jul 2001)

5.7% reduction per month

44% reduction in firearms backlog statewide in 12 months (Oct 2000 to Sep 2001)

3.7% reduction per month

Graduated scientist examiner from US ATF Firearms Examiner Academy (2nd Class)

Medical Services/Death Investigation
(Medical Examiners)

Total 9 reporting physicians (forensic pathologists)
Implemented statewide case consultation using
internet and digital imaging
Conversion to digital photography for medical examiners
84.7% reduction in photo expenses
net savings of $27,885 per year (versus FY98)
improved image availability (speed and image quantity) for
court
investigators
district attorneys
law enforcement
coroners
consultation and case review
Retired and replaced (10/17) aged body transport vehicles with lower mileage vehicles
Deaths of two youngsters in child-care in September 2000
September mine disaster in Brookwood – 13 deaths
December tornado in Tuscaloosa – 11 fatalities processed through lab within 24 hours
Draft version of statewide mass disaster fatality plan
Contracted consultant for development of state forensic odontology disaster plan
Case backlogs dependent on toxicology, DNA, and firearms
Increased efficiency in North and Central state - 500 case reduction in reporting backlog
Statewide contract – Forensic Anthropologist, University of Alabama
Statewide contract – Forensic Odontologist
Successful identification of perpetrator in sexual homicide of 14 year-old by bite mark
Resulted in conviction of perpetrator (Roanoke, AL)

Forensic Biology (DNA)

Total 14 trained reporting scientists

Total 14 trainee non-reporting scientists

Require full training (~2 years at present resources)

Should clear an additional 70 cases per month when fully trained (~20 months to clear existing backlog)

DNA Casework and Database are very cost-effective

Forensic Biology (Casework)

Total budget……$1,356,317.00

cost/case……..$977.88 (reference $5613)+

cost/sample…….$139.38 (reference $800)+

CODIS (DNA Database)

total……..…$394,697.00

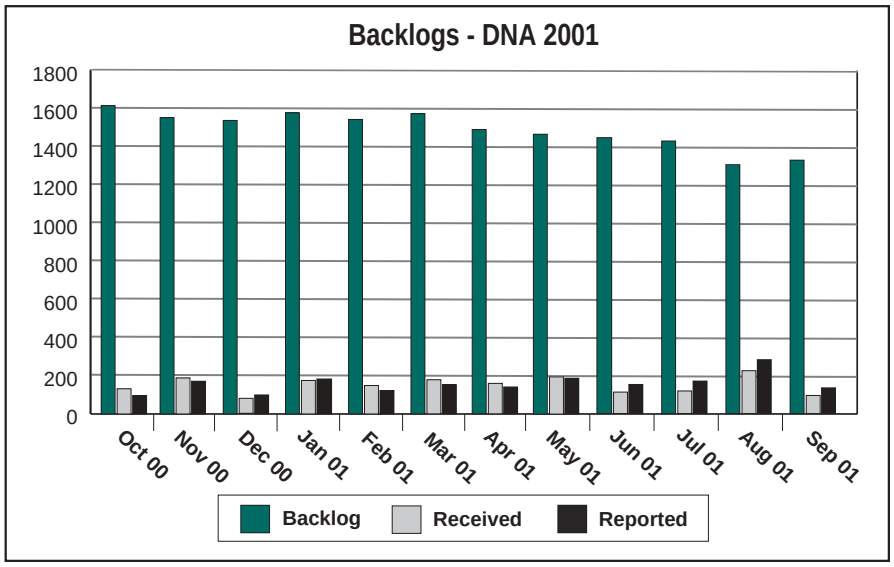
cost/sample entered……..……$24.87 (reference $40)+

+source ReliaGene™ Laboratories

DNA CASEWORK

16% decrease in DNA case backlogs in FY 2001

1.3% decrease in backlog per month in FY 2001



CODIS (DNA Database)

ADFS is at the forefront of national DNA database (CODIS) work nationwide

Alabama is a non-NDIS (National DNA Index System) state

ADFS presently runs 8 DNA markers on all samples

NDIS requires 13 markers

automatic case information uploads to national database

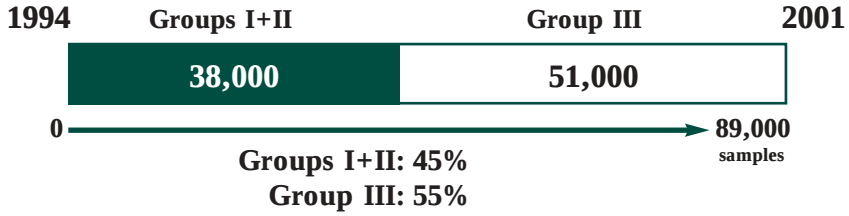
ADFS is moving to 16 markers, the next generation technology

When complete, Alabama will be NDIS state

Alabama DNA database has had tremendous success, but could do more!

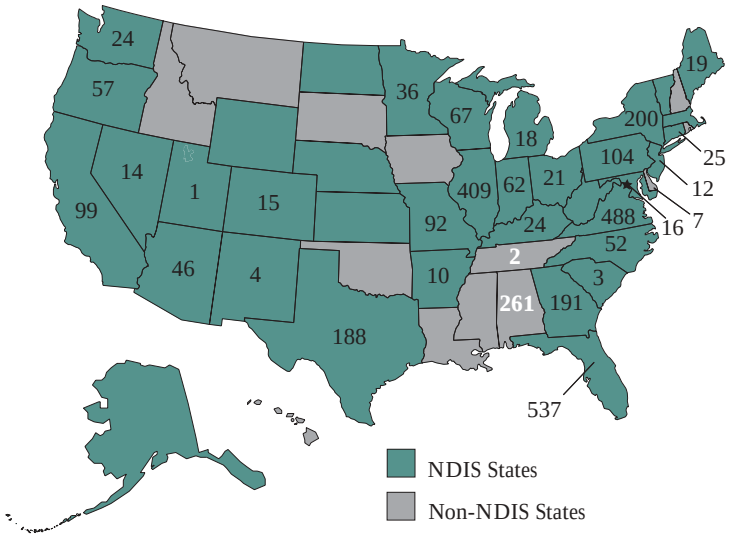
- since inception in 1994, some 89,000 samples collected
- violent felons (groups I + II – 38,000 samples) in database have yielded results
- 51,000 non-violent felon (group III) samples (55% of total) await entry

federal grant pending to analyze 10,000 (19.6%) of group III samples



Investigations Aided

Through June 2001



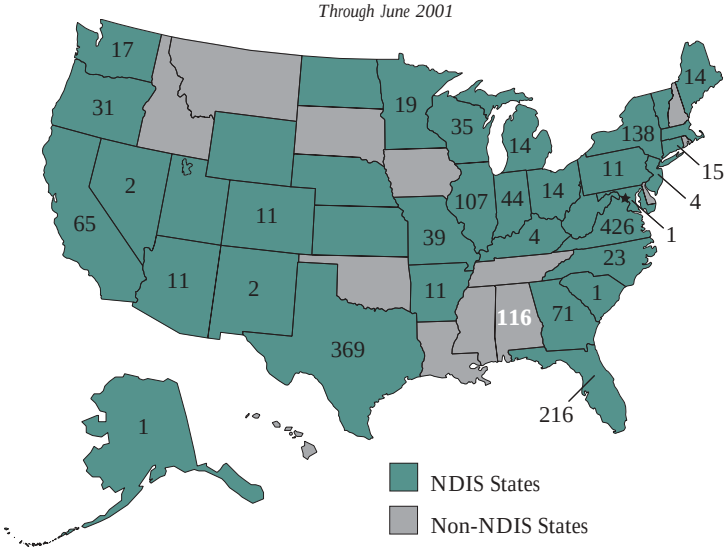
Total = 1,483 in 25 States
plus two Federal Laboratories

In assisting cases by providing assistance to investigators through DNA database (CODIS) Alabama has 10.3% of all hits in USA.

- **#4 for all US forensic labs**
- **#1 for non-NDIS forensic labs**

Statewide DNA Database Hits

Through June 2001



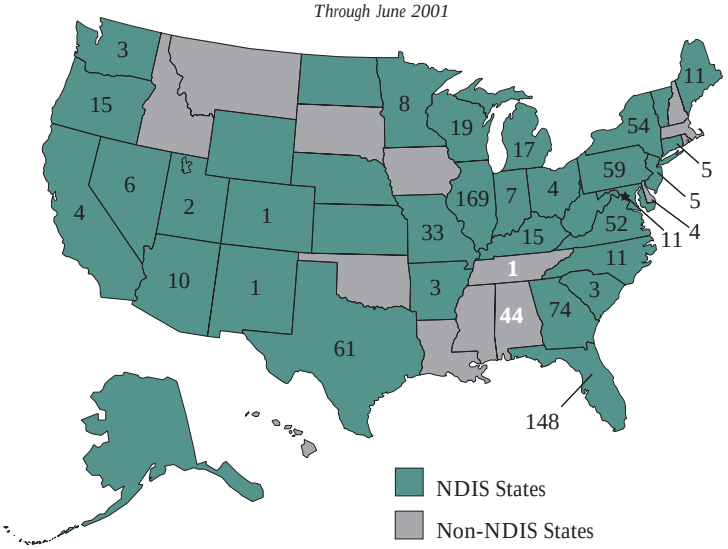
Total = 587 in 19 States

In matching convicted offender DNA database (CODIS) samples to cases Alabama has 10.2% of all hits in USA.

- **#5 for all US forensic labs**
- **#1 for non-NDIS forensic labs**

Forensic Hits

Through June 2001



Total = 466 in 24 States
plus two Federal Laboratories

In matching actual forensic cases to DNA database (CODIS) samples Alabama has 5.8% of all hits in USA.

- **#8 for all US forensic labs**
- **#1 for non-NDIS forensic labs**

Total Agencies

1,270

District Attorneys	42	Drug Enforcement Agencies	14
Sheriffs	67	Pardons and Paroles	9
Police Departments	418	Task Force	71
Coroners	85	Colleges	5
Judges	131	F.B.I.	19
Dept. of Corrections	23	I.R.S.	2
Alabama Beverage Control	61	Tobacco and Firearms	7
Fire Departments	116	Conservation	21
Hospitals	24	Alabama State Board of Pharmaceuticals	1
Customs	4	Tennessee Valley Authority	1
Dept. of Public Safety		State Vet Diagnostic Lab	11
State Patrol Division	71	US Marshall	1
Alabama Bureau of Investigation	66		

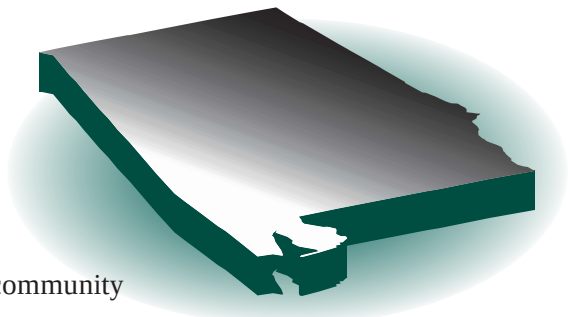
Opportunities

Statewide Laboratory Information Management System (projected cost ~$985,000)

Tremendous increase in productivity by streamlining entire analytic process
- Bar-coded evidence (at receipt)
  - Allows complete tracking of samples throughout process
  - Minimize specimen handling & potential contamination/damage
- Video capture and storage – analyses and scene investigation
- Automated analytical data capture
- Scanner interface for notes and archival materials
- Paperless reporting system
- Electronic signatures
- Internet web server allows automated case status inquiry by submitting agency
- Automated e-mail case reporting to submitting agency
- Automated electronic fax reporting to non-internet agencies
- Data warehousing
- Accurate monthly reporting
- Digital records archiving

Baseline start-up costs ~$495,000

Additional costs for maximal system utility ~$490,000



Southwest Alabama Integrated Criminal Justice System

Cooperative effort within 8 counties in Southwest Alabama

Funded via $8,000,000 federal grant

Goal to enhance information exchange and availability to justice community

CONCERNS

Administration

Staffing

DNA – backlog task force/training grant pending with ADECA
Toxicology
Firearms
Administration (personnel, accounting, and information technology)

Vehicles

High-mileage fleet requires continued overhaul

Communications

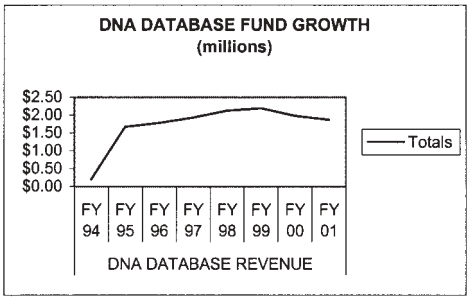
Major phone system overhauls with automation in 4 labs

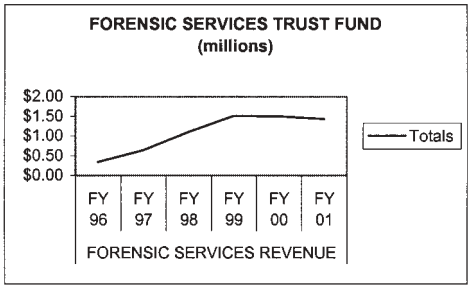
System validation

Individual scientist certification
Continuing professional education funding
State-wide accreditation
ASCLD/LAB (American Society of Crime Lab Directors)
NAME (National Association of Medical Examiners)

Budget

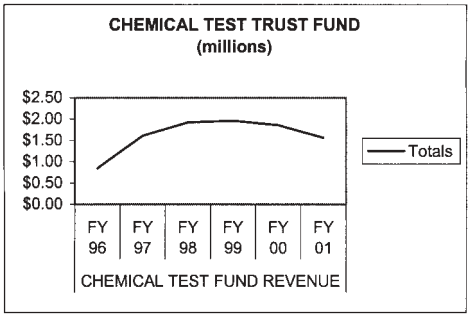
Profound decrease in state earmarked forensic trust funds





Fingerprint analysis

Medical retirement of one analyst has left only one qualified examiner statewide
Must hire replacement scientist (for quality assurance)
~$60,000 in immediate equipment needs

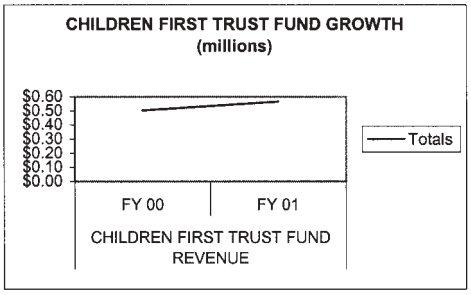


Fire Debris

One part-time analyst (also acts as lab director in busiest lab)
One trainee
Must hire replacement scientist (for quality assurance)
~$75,000 in immediate equipment needs

Trace Evidence (Hairs, Fibers, Imprints, etc.)

Two part-time analysts (both also act as lab directors in busy labs and >30 yrs service)
One trainee
Must hire new trainee scientist(s) while present staff can train
~$375,000 in immediate equipment needs

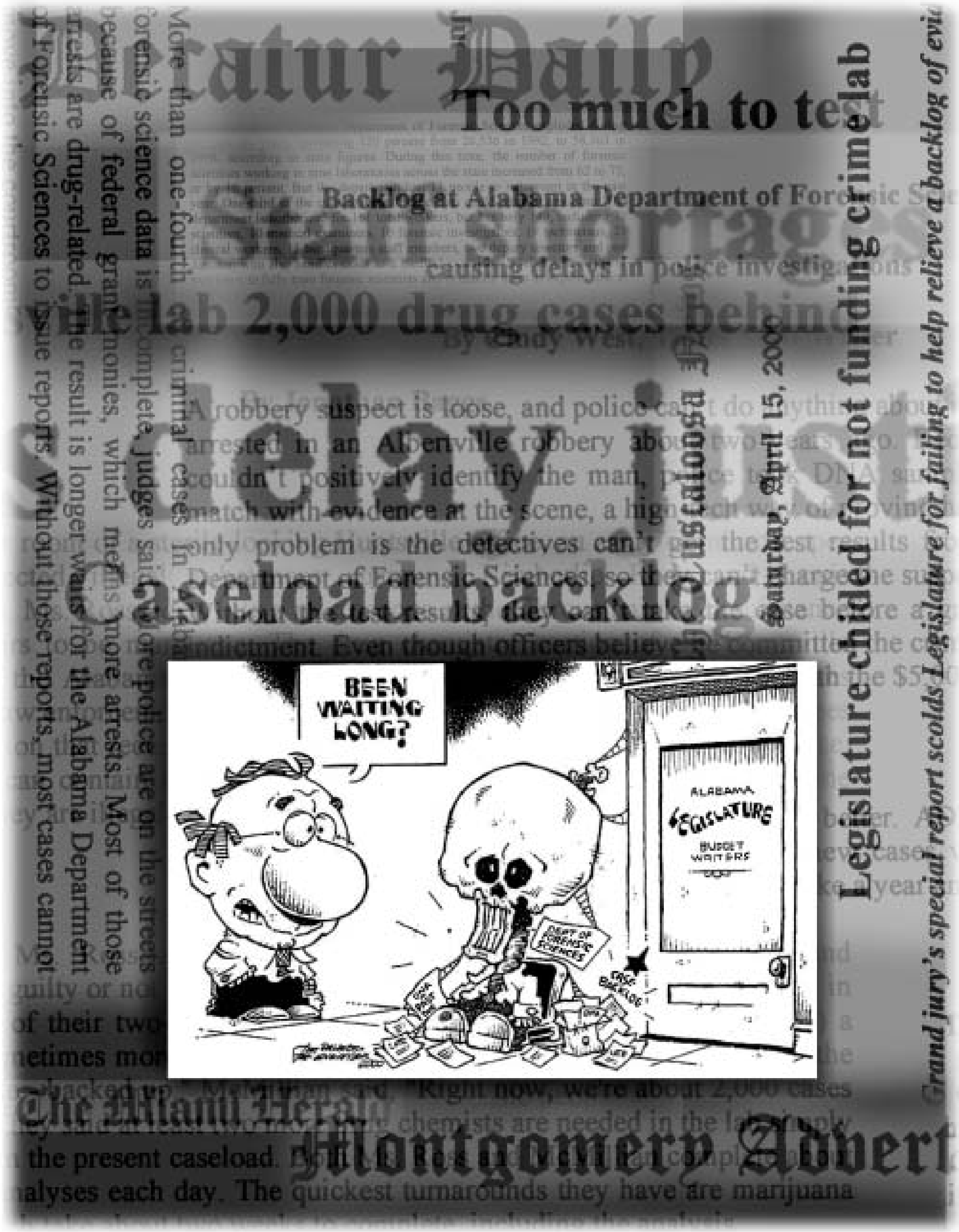


Questioned Documents (Forgeries)

One analyst
Must hire second scientist (for quality assurance)
~$70,000 in immediate equipment needs

Drug Chemistry (Illicit Drug Analysis)

Clandestine methamphetamine labs disproportionately adversely affecting caseload
Must either
Hire additional personnel to handle clan labs
Discontinue scene analysis of clan labs
New resources will be required to continue to work scenes and/or evidence


Too much to test
Backlog at Alabama Department of Forensic Sciences
Legislature chided for not funding crime lab
2,000 drug cases behind
Caseload backlog
BEEN WAITING LONG?
ALABAMA LEGISLATURE
BUDGET WRITERS
DEPT OF FORENSIC SCIENCES
CASE BACKLOG

Department News

Montgomery Medical News

Dedication of the "C. L. Rabren Laboratory"

The Alabama Department of Forensic Sciences dedicated its Montgomery Medical Examiner's Facility at 10:00 A.M. on June 20, 2001. The building was named the **"C. L. Rabren Laboratory"** in honor of the Department's former Director, Carlos L. Rabren.

Mr. Rabren began his service to the citizens of Alabama in 1958 working in the "Alabama Department of Toxicology and Criminal Investigation" in Auburn, Alabama, where he grew up. In 1973 he was appointed Deputy Director of the Department. In 1978, with the retirement of former Director Dr. C. J. Rehling, he was appointed the third Department's Director by Alabama's Attorney General William J. Baxley. During the same year the Department was renamed the "Alabama Department of Forensic Sciences." Mr. Rabren continued to serve as Director over the next 20 years until his retirement in 1998.

The Montgomery Medical Examiner's Facility was constructed on the Auburn University-Montgomery Campus in 1989 to serve the growing need for death investigation services in the Central Alabama area. The dedication ceremony renaming it the **"C. L. Rabren Laboratory"** culminates an effort begun by present Director J. C. U. Downs, M.D., in conjunction with the 2000 Legislature. It was authorized by Senate Joint Resolution 18 and co-sponsored by all 35 Senators. The dedication of the facility in honor of Mr. Rabren is appropriate because of his significant contributions to the furtherance of forensic sciences in our state and in our nation, particularly in the area of death investigation.

After the ceremony a portrait of Mr. Rabren, a copy of the Senate Resolution renaming the facility in his honor, and a plaque inscribed with highlights of his accomplishments were permanently displayed in the lobby of the building.

Mobile Lab News

Mobile Regional Forensic Laboratory Featured on National Cable Broadcast

(MOBILE, AL) The State of Alabama's Department of Forensic Sciences Mobile Regional Laboratory will be featured on a nationwide Discovery Channel broadcast on Tuesday, May 22, 2001. The case involves the 1994 death of an elderly woman from multiple blunt force injuries. Her son was convicted of the crime based on DNA evidence from the crime scene.

The woman had been bludgeoned about the face and the assailant severed her hands from her body after the woman's death. The body was dumped into a lake just east of the Mississippi state line in Mobile County. Scene investigators from the Department of Forensic Sciences located a cigarette butt at the crime scene, which eventually incriminated the son. The autopsy was performed by Dr. Jamie Downs, Director/Chief Medical Examiner of the Department of Forensic Sciences.

"This case points out the value of good crime scene investigation'" said Dr. Downs. "It might be easy to overlook something as small as a cigarette butt, particularly in an overgrown grassy area with a considerable amount of debris scattered around. Working with the Mobile County Sheriff's Office, we were able to locate the evidence and send it back to the lab for analysis. It is essential to have the forensic and crime scene expertise available and on hand to recognize and collect this type of evidence. The DNA evidence in this case was crucial to the case against the defendant. If field agents were not available to work this crime scene, I fear the case would have been entirely circumstantial and it may well have had a different result."

The episode, titled "Dead in the Water," will premiere at 8:00 CDT on May 22, 2001 as part of the Discovery Channel series, *The New Detectives: Case Studies in Forensic Science.*

Jacksonville Lab News

State Forensics Beating Backlog in Drug Evidence

(BIRMINGHAM) The State of Alabama's Department of Forensic Sciences, in an ongoing program funded through an ADECA grant, recently trained six new Forensic Scientists at their Jacksonville Division, on the Campus of Jacksonville State University. These scientists spent over five months of intense training in the area of examination of illicit drug evidence. They will be stationed in various labs throughout the state.

The Forensic Sciences Drug Cases Backlog Task Force was funded by a grant from the Alabama Department of Economic and Community Affairs (ADECA). "Our thanks to Governor Siegelman for his support of this program, targeted at providing evidence in a timely manner to the justice system." Forensic Sciences Deputy Director for Laboratory Services, Taylor Noggle and Chief of Drug Chemistry, Ron Hubbard, ran the program, which trained the

scientists in Brewer Hall at Jacksonville State University. "Our sincere thanks go to Jacksonville State, especially President Bill Meehan," Downs said. "Without the support of JSU, it would not have happened this quickly."

Dr. J.C. Upshaw Downs, Forensics' Director, said that this represented an addition of one quarter to the present staffing (25) in this section. "Forensic Sciences handled roughly 70,000 cases last year in all the forensic sciences, including death investigation, toxicology, DNA, firearms, trace evidence, arson, and forgery. Far and away, most of our cases, over one-third, involve illegal drugs. The task force has significantly reduced the drug backlog, by about 20% for this year – we've still got a ways to go, but it is getting much better."

"In the not too distant past, something like one-quarter of criminal cases set for trial in Alabama were rescheduled because forensic data is incomplete; it was two thirds of drug cases. That is not acceptable. We are doing better. This program shows it. If nothing else changes, we should take that 10,000 case backlog to zero in the next two years," said Downs.

"Clandestine methamphetamine labs ("clan labs") remain a real concern," said Downs. "They have added an additional 30 weeks worth of work to the drug section since December 2000. We have handled 95 such labs and it only seems to be getting more of a concern. That is our next big issue."

The Post and Courier
Charleston • North Charleston, S.C. THE SOUTH'S OLDEST DAILY NEWSPAPER ★ $1.50

Scientist at home working on sub crew

BY BRIAN HICKS
Of The Post and Courier Staff

As a child, Jamie Downs and his brother would explore the Broad Street basement museum dedicated to the H. L. Hunley, where they were mesmerized by the sight of nine mannequins sitting inside the life-size model of the lost Confederate submarine.

Downs, claustrophobic even then, thought it amazing that anyone could—or would—get inside something that small.

THE HUNLEY

"It took my breath away," he recalled this week.

He never forgot that display, the look of those mannequins. Now, he finds himself working on the real thing.

Dr. Jamie Downs, the director/chief medical examiner for the state of Alabama, has returned to his childhood home to help scientists excavating the Hunley solve the mystery of why the submarine sank and what happened to the crew.

It's hard to tell which is more exciting to him about the assignment —being part of an international team filled with experts from a dozen fields, or sharing the volunteer work with his brother, John, a local businessman who has helped scientists sifts through the sub's interior.

"Thirty years later, and we're able to share that bond again," he says.

His trip from his childhood home at 38 Church St. has been a long one.

After high school at Porter-Gaud, Downs was determined to be an orthopedic surgeon. He got an

undergraduate degree in biochemistry from the University of Georgia, a family tradition. Then he came back to Charleston.

He got his doctor of medicine degree from the Medical University of South Carolina in 1988, but was growing wary of his chosen profession. He couldn't bear that thought of being away from his family—wife Heather, and four children now—as much as being a surgeon would require. So, with the nudge of local friends, including former Charleston County medical examiner Sandra Conradi, Downs started pursuing other options. He began studying forensic pathology and clinical pathology.

The science agreed with him. Since he was a child, Downs had been fascinated with how things were put together, how things work. He liked understanding how things had come about.

"You have the opportunity to understand what happened to somebody," he says of his job.

"People ask me if it's not depressing work. But the worst thing that can happen to them has already happened. What you try to do is understand what happened, for the family, for the community at large."

For five years, from 1989 to 1994, Downs worked as a medical examiner in Charleston. And then Alabama called.

For four years, Downs served as a state medical examiner in Mobile, the town where the Hunley was built. The port town had kept the memory of the lost submarine alive just like Charleston, and felt a closer kinship with the crew. Lt. George Dixon was living in Mobile before he came to Charleston to take over the Hunley's operations.

Downs, it seemed, was destined to live in the shadow of the Hunley all his life.

When the discovery of the fish-boat was announced in 1995, Downs called Sen. Glenn McConnell, installed as chairman of the Hunley Commission, and offered his services. McConnell, aware of the budget constraints of the project, gladly accepted the professional services.

By the time the Hunley was raised and the exploration of its interior began, Downs had become a national spokesman and expert on forensic sciences. He had testified before Congress on the issue, served on a dozen boards, written five chapters for the FBI's manual on managing death investigations. His brother, John, calls him the classic "local boy done good."

"People ask me if it's not depressing work. But the worst thing that can happen to them has already happened. What you try to do is understand what happened, for the family, for the community at large."

Given Alabama's close ties to the Hunley, it was not hard to get permission from the state's governor to donate some of Downs' time to help with the investigation.

The answers will not come overnight. Downs says if he's learned anything in forensic sciences, it is patience. The detective work of a medical examiner is not always finished in the neat, tidy 52 minutes of the television show C.S.I. It is, Downs understates, a lengthy process that only begins with the autopsy.

Out of respect for the crew, Downs and other scientists on the project, including Dr. Doug Owsley from the Smithsonian Institute, have been careful not to comment to much about the Hunley remains. But Downs does say the level of preservation of the crew is amazing, as evidenced by the presence of brain tissue in the skulls of the men and the discovery of the most minute, fragile bones in the human body.

Some of the archaeologists were puzzled when they discovered those bones—they don't normally find on a dig.

Downs says he is confident, with the team of experts assembled on the Hunley project, that if there is the answer to what happened in the submarine's final moments are there, they will be found.

And that, he says, is the whole point. "To let the crew, at last, have their peace."

This article originally appeared in *The Post and Courier* on Sunday, June 3, 2001.